

## ATMOSPHERIC ELECTRICITY.

## THUNDERSTORMS.

Description of the more severe thunderstorms reported for the month is given under "Local storms."

Thunderstorms were reported as follows: East of the Rocky Mountains they were reported in the greatest number of states, 31, on the 17th; in 20 to 30 on the 1st, 5th to 8th, 10th, 11th, 12th, 16th, 18th, 19th, 20th, 25th, and 26th; in 10 to 19 on the 2d, 3d, 4th, 9th, 13th, 14th, 15th, 21st to 24th, 27th, 28th, and 29th; and in 9 on the 30th and 31st.

East of the Rocky Mountains thunderstorms were reported on the greatest number of dates, 31, in Florida; on 20 to 30 in Alabama, Kansas, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, North Carolina, South Carolina, South Dakota, Tennessee, and Texas; on 10 to 19 in Arkansas, Georgia, Iowa, Kentucky, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, and Wisconsin; and on 1 to 9 in Connecticut, District of Columbia, Illinois, Indiana, Maine, Maryland, Montana, Rhode Island, Vermont, Virginia, and West Virginia. Delaware and Indian Territory were the only states in which thunderstorms were not reported.

West of the Rocky Mountains thunderstorms were reported in Arizona on the 1st to 6th, 12th to 26th, 28th to 31st; in California on the 3d, 4th, 27th, and 29th; in Colorado on the 1st to 31st; in Idaho on the 3d, 4th, 6th, 13th, 19th, 20th, 21st, 29th, and 30th; in Nevada on the 1st to 6th, 8th, 11th, 12th, 13th, 16th, 22d, and 25th to 30th; in New Mexico on the 1st, 8th, 14th, 16th to 19th, 21st, 27th, and 31st; in Oregon on the 1st, 16th, 17th, and 21st; in Utah on the 1st, 3d to 7th, 11th, 13th, 14th, 16th, 18th, 20th, 21st, 25th, 26th, and 30th; in Washington on the 5th, 6th, 13th, 17th, 19th, 20th, and 21st; and in Wyoming on the 3d, 8th, 13th, 14th, and 22d.

## AURORAS.

## Auroral displays of August, 1893.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
5	Duluth, Minn.....	Cov'd 90	18	Arch, with streamers.
6	Red Wing, Minn.....	90 to 270	60	Waves of light nearly to zenith.
6-7	Eastport, Me.....	.....	10	Low arch; waves of light to zenith.
6-7	New London, Conn...	135 to 225	.....	Streamers; waves of light, having a quick motion, extended nearly to zenith.
6-7	Oswego, N. Y.....	.....	.....	Brilliant flashes of light near zenith and a partial corona a few degrees s.w. of zenith.
6-7	Chicago, Ill.....	135 to 270	.....	A narrow belt of pale green, with occasional white streamers and flashes of light to zenith.
6	Riley, Ill.....	45 to 225	.....	Arch in n., with streamers in motion from e. to w.
6	Alpena, Mich.....	90 to 225	80	Beams of white light.
6-7	Detroit, Mich.....	135 to 225	80	White light, with occasional pink tint; waves of light moved with great rapidity to zenith.

## Auroral displays—Continued.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
6-7	Manistee, Mich.....	.....	60	Flashes of light to zenith; beams of light moved slowly from w. to e.
6	Marquette, Mich.....	In north.	Zenith.	Waves of silvery light to zenith, and luminous clouds to 140°.
6-7	Sault Ste. Marie, Mich	135 to 315	100	Tea-green color, with a waving motion and luminous beams of light.
6-7	La Crosse, Wis.....	150 to 240	.....	Streamers to 45° and bright waves of light to beyond zenith.
6-7	Milwaukee, Wis.....	.....	.....	An arch, with streamers of white at times, covering entire sky; a curtain-like appearance with a waving motion.
6-7	Minneapolis, Minn...	112 to 247	.....	Arch, with streamers to zenith and a few beyond.
6	Saint Cloud, Minn.....	.....	.....	Bright waves and streamers, rapidly changing in form and color.
6	Saint Paul, Minn.....	180 to 310	20	Faint white light; numerous streamers to 70° appeared and disappeared in rapid succession.
6	Amara, Iowa.....	Cov'd 90	10	Streamers and waves of light to 45°.
6-7	Des Moines, Iowa....	In north.	.....	Arch in n., with many bright streamers of green and pink.
6-7	Dubuque, Iowa.....	135 to 225	.....	Slender beams nearly to zenith; a cloud-like formation appeared and disappeared in rapid succession.
6	Sioux City, Iowa.....	135 to 225	45	An arch, with waves of light of a greenish tint; shaft of light in nw. to zenith.
6-7	Bismarck, N. Dak....	90 to 270	105	A band of light, with a quick motion, like the folds of a curtain; bright purple streamers.
6	Fort Buford, N. Dak.	In north.	.....	A corona in n.; the display was very brilliant and active.
6-7	Huron, S. Dak.....	110 to 300	50	A diffused light in n.; beautiful beams of light to 50°.
6	Midland, S. Dak.....	135 to 315	.....	Bright waves of light to zenith.
6-7	Rapid City, S. Dak....	95 to 185	.....	An arch s. of zenith, with "merry dancers."
6	Delriehs, S. Dak.....	.....	.....	Arch resting on dark segment; white streamers.
6-7	Yankton, S. Dak.....	150 to 220	45	Bright glow; small streamers.
6	Pierre, S. Dak.....	120 to 245	45	Arch in n.; small streamers.
6-7	Helena, Mont.....	90 to 270	.....	Beam of light, followed by occasional shooting beams of light to altitude 25°.
6-7	Miles City, Mont....	In north.	.....	Tremulous beams, with a waving motion; "merry dancers" to zenith.
6-7	Kearney, Nebr.....	160 to 225	.....	Pale orange color resting on a dark arch; streamers to 45°.
6	Valentine, Nebr.....	In north.	24	Rays of white light resting on a dark segment; pale streamers moving from n. to w.
7	Spokane, Wash.....	In north.	20	Began at 12.10 a.m.; diffused light in n. on dark segment; several beams to altitude 55°.
6	Albany, Oregon.....	135 to 225	50	Pale yellow streamers tinged with rose color.
6	Heppner, Oregon.....	.....	60	Luminous beams in n. sky; streamers in continual motion.
7	Saint Paul, Minn.....	170 to 205	80	Vertical beams appeared and disappeared in rapid succession.
12	Marquette, Mich.....	.....	.....	Arch resting on dark segment; a silvery white light, with upper edges tinged with pink.
12	Bismarck, N. Dak.....	165 to 240	15	Arch; few indistinct streamers.
13	Cheyenne, Mich.....	Cov'd 50	.....	Brilliant streamers to zenith.
15-16	Pierre, S. Dak.....	130 to 220	30	Cloud-like appearance, through which light passed in rippling waves.
18	Marquette, Mich.....	95 to 275	Zenith.	Scattered luminous clouds in n.; streamers to zenith.
18	Milwaukee, Wis.....	In north.	45	Arch; rays of light in n.
18	Red Wing, Minn.....	170 to 190	70	Faint gray light.
18	Saint Paul, Minn.....	170 to 210	60	Faint white light, with numerous beams.

## STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for August, 1893, of the directors of the various state weather services:

## ALABAMA.

**Temperature.**—The mean was 0.6 above the normal; maximum, 100, at Brewton and Eufaula, 29th; minimum, 50, at Newburg, 23d; greatest monthly range, 48, at Newburg; least monthly range, 19, at Elba.

**Precipitation.**—The average was 0.42 above the normal; greatest monthly, 10.51, at Union Springs; least monthly, 0.20, at Clanton.

**Wind.**—Prevailing direction, south. — *W. M. Dudley, Observer, Weather Bureau, Montgomery, director.*

## ARIZONA.

**Temperature.**—The mean was normal; maximum, 116, at Fort Mohave, 2d; minimum, 40, at Flagstaff, 31st; greatest monthly range, 51, at San Carlos; least monthly range, 26, at Red Rock.

**Precipitation.**—The average was 0.88 above the normal; greatest monthly, 8.99, at Fort Huachuca; least monthly, 0.88, at Yuma.

**Wind.**—Prevailing direction, southwest. — *W. Burrows, Observer, Weather Bureau, Tucson, director.*

## ARKANSAS.

*Temperature.*—The mean was 1.2 below the normal; maximum, 102, at Warm Springs, 8th; minimum, 48, at Fayette and Keesees Ferry, 30th; greatest monthly range, 48, at Keesees Ferry; least monthly range, 29, at Greenville, Miss.

*Precipitation.*—The average was 0.22 below the normal; greatest monthly, 9.40, at Hamburg; least monthly, 0.62, at Memphis, Tenn.

*Wind.*—Prevailing direction, south.—*F. H. Clarke, Local Forecast Official, Weather Bureau, Little Rock, director.*

## CALIFORNIA.

*Temperature.*—The mean was 1.4 below the normal; maximum, 112, at Tulare, 1st, 2d, 3d; minimum, 39, at Fort Bidwell, 7th and 14th, and at San Jose, 26th; greatest monthly range, 60, at Tulare; least monthly range, 16, at Poway.

*Precipitation.*—The average was 0.02 below the normal; greatest monthly, 0.52, at Needles; least monthly, 0.00; out of 102 stations, but 12 reported an appreciable amount.

*Wind.*—Prevailing direction, west.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

## COLORADO.

*Temperature.*—The mean was 1.0 below the normal; maximum, 102, at Cheyenne Wells, 8th; minimum, 25, at Pikes Peak, 24th.

*Precipitation.*—The average was about 0.30 above the normal; greatest monthly, 8.40, at Delta; least monthly, 0.11, at Ward District.

*Wind.*—Prevailing direction, west.—*J. J. Gilligan, Observer, Weather Bureau, Denver, director.*

## FLORIDA.

*Temperature.*—The mean was about 1.2 below the normal; maximum, 103, at Mullet Key, 18th and 19th; minimum, 63, at Orlando, 10th; greatest monthly range, 31, at Orlando; least monthly range, 19, at Hypoluxo.

*Precipitation.*—Greatest monthly, 11.10, at Plant City; least monthly, 1.94, at Key West.

*Wind.*—Prevailing direction, southeast.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

## GEORGIA.

*Temperature.*—Maximum, 100, at Cordele, 3d; minimum, 54, at Diamond, 22d; greatest monthly range, 40, at Adairsville and Ramsey; least monthly range, 19, at Monticello.

*Precipitation.*—Greatest monthly, 17.61, at Mount Vernon; least monthly, 1.05, at Marietta.

*Wind.*—Prevailing direction, northeast.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

## IDAHO.

*Temperature.*—Maximum, 108, at Payette, 1st; minimum, 27, at Bonanza City, 14th; greatest monthly range, 72, at Payette and American Falls; least monthly range, 55, at Kootenai.

*Precipitation.*—Greatest monthly, 0.56, at Lake; least monthly, 0.00, at Boise Barracks, Fort Sherman, and Payette.

*Wind.*—Prevailing direction, southwest.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

## ILLINOIS.

*Temperature.*—The mean was 0.4 below the normal; maximum, 100, at McLeansboro, 6th, Rushville, 9th, and at Ottawa and Olney, 10th; minimum, 38, at Dixon, 30th; greatest monthly range, 60, at Hennepin; least monthly range, 31, at Golconda.

*Precipitation.*—The average was 2.25 below the normal; greatest monthly, 4.89, at Bushnell; least monthly, 0.10, at Fort Sheridan.

*Wind.*—Prevailing direction, northeast.—*John Craig, Observer, Weather Bureau, Springfield, director.*

## INDIANA.

*Temperature.*—The mean was 0.9 above the normal; maximum, 97, at Bedford and Marion, 5th and 8th; minimum, 39, at Lafayette, 30th; greatest monthly range, 58, at Lafayette; least monthly range, 32, at Huntingburg.

*Precipitation.*—The average was 2.33 below the normal; greatest monthly, 4.25, at Huntingburg; least monthly, 0.16, at Franklin.

*Wind.*—Prevailing direction, northeast.—*Prof. H. A. Huston, Lafayette, director; C. F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

## IOWA WEATHER AND CROP SERVICE.

*Temperature.*—The mean was 1.6 below the normal; maximum, 101, at Bonaparte, 9th; minimum, 30, at Elkador, 30th; greatest monthly range, 68, at Elkador; least monthly range, 43, at Estherville.

*Precipitation.*—The average was about 1.25 below the normal; greatest monthly, 6.22, at Clinton; least monthly, 0.40, at Algona.

*Wind.*—Prevailing direction, northwest.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

## KANSAS.

*Temperature.*—The mean was 1.6 below the normal; maximum, 111, at Grenola, 9th; minimum, 38, at Dodge City, 23d, and at Lakin, 30th; greatest monthly range, 62, at Cunningham; least monthly range, 41, at Syracuse.

*Precipitation.*—The average was 0.91 below the normal; greatest monthly, 7.20, at Luray; least monthly, 0.23, at Grenola.

*Wind.*—Prevailing direction, south.—*T. B. Jennings, Observer, Weather Bureau, Topeka, director.*

## KENTUCKY.

*Temperature.*—The mean was 0.7 below the normal; maximum, 99, at Harrodsburg, 5th, and at Princeton, 10th; minimum, 48, at Harrodsburg, 8th; greatest monthly range, 51, at Harrodsburg; least monthly range, 17, at South Fork.

*Precipitation.*—The average was 2.00 below the normal; greatest monthly, 3.56, at Catlettsburg; least monthly, 0.39, at Franklin.

*Wind.*—Prevailing direction, north.—*Frank Burke, Local Forecast Official, Weather Bureau, Louisville, director.*

## LOUISIANA.

*Temperature.*—The mean was 1.0 above the normal; maximum, 101, at Liberty Hill, 1st; minimum, 52, at Natchitoches, 31st; greatest monthly range, 44, at North Louisiana Experiment Station; least monthly range, 30, at Hamburg.

*Precipitation.*—The average was 0.69 above the normal; greatest monthly, 11.25, at Lake Charles; least monthly, 1.63, at Shreveport.

*Wind.*—Prevailing direction, north.—*R. E. Kerkam, Local Forecast Official, Weather Bureau, New Orleans, director.*

## MARYLAND.

*Temperature.*—Maximum, 97, at Boettcherville, 25th; minimum, 44, at Boettcherville, 15th, and at Oakland, 7th, 8th, and 15th; greatest monthly range, 53, at Boettcherville; least monthly range, 81, at Solomons.

*Precipitation.*—Greatest monthly, 6.26, at Fallston; least monthly, 1.61, at Cambridge.

*Wind.*—Prevailing direction, northwest.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; Prof. Milton Whitney, Maryland Agricultural College, secretary and treasurer; C. P. Cronk, Observer, Weather Bureau, in charge.*

## MICHIGAN.

*Temperature.*—The mean was 1.8 below the normal; maximum, 100, at Mottville, 10th; minimum, 31, at Grayling, 7th, and at Paris 31st; greatest monthly range, 64, at Grayling; least monthly range, 40, at Detroit.

*Precipitation.*—The average was 1.85 below the normal; greatest monthly, 5.80, at Lathrop; least monthly, 0.30, at Berrien Springs.

*Wind.*—Prevailing direction, southwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

## MINNESOTA.

*Temperature.*—The mean was 2.3 above the normal; maximum, 101, at Beardsley, 7th and 8th, and at Farmington, 8th; minimum, 30, at Medford and Saint Charles, 29th; greatest monthly range, 67, at Beardsley; least monthly range, 42, at Duluth, Pine River Dam, and Barrett.

*Precipitation.*—The average was 0.33 below the normal; greatest monthly, 7.65, at Wadena; least monthly, 1.38, at Camden.

*Wind.*—Prevailing direction, south.—*E. A. Beals, Observer, Weather Bureau, Minneapolis, director.*

## MISSISSIPPI.

*Temperature.*—The mean was about normal; maximum, 101, at Crystal Springs, 23d and 24th, and at Water Valley, 11th; minimum, 54, at Batesville and Vaiden, 22d, and at Port Gibson, 22d and 30th.

*Precipitation.*—The average was 0.27 above the normal; greatest monthly, 15.75, at Moss Point; least monthly, 0.42, at Hernando.—*R. J. Hyatt, Local Forecast Official, Weather Bureau, Vicksburg, director.*

## MISSOURI.

*Temperature.*—The mean was 2.2 below the normal; maximum, 100, at Fayette, 8th; minimum, 40, at Darksville, 29th, at Bethany, Panacea, and Warrensburg, 30th, and at Houston and Rea, 31st; greatest monthly range, 58, at Plattsburg; least monthly range, 32, at McCune.

*Precipitation.*—The average was 1.24 below the normal; greatest monthly, 6.63, at Rea; least monthly, 0.20, at Wheatland.

*Wind.*—Prevailing direction, north.—*J. R. Rippey, Secretary, State Board of Agriculture, Columbia, director; H. A. McNally, Observer, Weather Bureau, assistant.*

## MONTANA.

No report received from this service in time for this Review.

## NEBRASKA.

*Temperature.*—The mean was 2.0 below the normal; maximum, 110, at Indianola, 4th; minimum, 35, at Hartington, 8th, and at Oakdale, 29th; greatest monthly range, 68, at Indianola; least monthly range, 84, at Stanton.

*Precipitation.*—The average was 0.27 below the normal; greatest monthly, 7.91, at Table Rock; least monthly, 0.25, at Mullen.

*Wind.*—Prevailing direction, south.—*George E. Hunt, Local Forecast Official, Weather Bureau, Omaha, director.*

## NEVADA.

*Temperature.*—The mean was 0.9 below the normal; maximum, 104, at Palisade, 2d, and at Mill City and Downeyville, 4th; minimum, 25, at Stofiel, 21st; greatest monthly range, 73, at Stofiel.

**Precipitation.**—The average was 0.48 below the normal; greatest monthly, 1.27, at Palmetto.

**Wind.**—Prevailing direction, southwest.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

#### NEW ENGLAND.

**Temperature.**—The average was 0.8 above the normal; maximum, 102, at Farmington, 10th; minimum, 34, at Hyde Park, 14th; greatest monthly range, 64, at Stratford and Jacksonville; least monthly range, 21, at Nantucket.

**Precipitation.**—The average was 0.55 above the normal; greatest monthly, 9.18, at Wells; least monthly, 2.81, at Stratford.

**Wind.**—Prevailing direction, southwest.—*J. Warren Smith, Observer, Weather Bureau, Boston, director.*

#### NEW JERSEY.

**Temperature.**—The mean was 0.8 above the normal; maximum, 99, at River Vale, 6th; minimum, 38, at Charlotteburg, 14th; greatest monthly range, 57, at River Vale; least monthly range, 28, at Atlantic City.

**Precipitation.**—The average was 1.78 above the normal; greatest monthly, 11.94, at Belvidere; least monthly, 8.55, at Atlantic City.

**Wind.**—Prevailing direction, southwest.—*E. W. McGann, Observer, Weather Bureau, New Brunswick, director.*

#### NEW MEXICO.

**Temperature.**—The mean was slightly below the normal; maximum, 103, at Embudo, 14th; minimum, 34, at Fort Wingate, 26th; greatest monthly range, 59, at Monero; least monthly range, 33, at La Luz.

**Precipitation.**—The average was considerably above the normal; greatest monthly, 6.97, at Las Vegas; least monthly, 0.42, at Olio.—*H. B. Hersey, Observer, Weather Bureau, Santa Fe, director.*

#### NEW YORK.

**Temperature.**—The mean was 0.6 above the normal; maximum, 91, at Madison Barracks, 8th; minimum, 33, at South Kortright, 14th; greatest monthly range, 62, at Eden Center; least monthly range, 32, at Setauket.

**Precipitation.**—The average was 2.33 above the normal; greatest monthly, 12.48, at Easton; least monthly, 2.01, at Fleming.

**Wind.**—Prevailing directions, northwest and southwest.—*Prof. E. A. Fuetes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

#### NORTH CAROLINA.

**Temperature.**—The mean was 1.1 below the normal; maximum, 98, at Chapel Hill, 12th; minimum, 41, at Blowing Rock, 15th; greatest monthly range, 47, at Mount Airy; least monthly range, 21, at Hatteras.

**Precipitation.**—The average was 1.00 above the normal; greatest monthly, 14.29, at Columbus; least monthly, 2.41, at Bryson City.

**Wind.**—Prevailing direction, northeast.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

#### NORTH DAKOTA.

**Temperature.**—The mean was 1.8 above the normal; maximum, 109, at Medora, 2d and 3d; minimum, 29, at Berlin, 29th; greatest monthly range, 76, at New Salem and Williston; least monthly range, 54, at University.

**Precipitation.**—The average was 0.85 below the normal; greatest monthly, 8.27, at Wahpeton; least monthly, 0.10, at Williston.

**Wind.**—Prevailing direction, northwest.—*W. H. Fallon, Observer, Weather Bureau, Bismarck, director.*

#### OHIO WEATHER AND CROP SERVICE.

**Temperature.**—The mean was 0.7 above the normal; maximum, 101, at Lowell, 26th; minimum, 37, at Wooster, 31st; greatest monthly range, 60, at Coalton; least monthly range, 35, at Cincinnati and Ashland.

**Precipitation.**—The average was 1.03 below the normal; greatest monthly, 6.36, at New Alexandria; least monthly, 0.10, at Piqua.

**Wind.**—Prevailing direction, northwest.—*L. N. Bonham, Columbus, director; C. M. Strong, Observer, Weather Bureau, assistant.*

#### OKLAHOMA.

**Temperature.**—Maximum, 106, at Purcell, 16th; minimum, 45, at Ponca, 28th.

**Precipitation.**—Greatest monthly, 12.55, at Buffalo; least monthly, 0.80, at Ponca.

**Wind.**—Prevailing direction, south.—*J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.*

#### OREGON.

**Temperature.**—The mean was 0.7 above the normal; maximum, 108, at Newbridge, 1st; minimum, 27, at Fife, 15th; greatest monthly range, 68, at Newbridge; least monthly range, 26, at Bandon.

**Precipitation.**—The average was 0.40 below the normal; greatest monthly, 0.63, at Tillamook Rock Light House; least monthly, 0.00, at a majority of stations.

**Wind.**—Prevailing direction, northwest.—*Hon. H. E. Hayes, Master State Grange, Portland, director; B. S. Pague, Local Forecast Official, Weather Bureau, assistant.*

#### PENNSYLVANIA.

**Temperature.**—The mean was normal; maximum, 99, at New Castle, 11th, and at Huntingdon, 18th and 25th; minimum, 30, at State College, 14th; greatest monthly range, 62, at State College; least monthly range, 35, at Philadelphia.

**Precipitation.**—The average was 0.27 above the normal; greatest monthly, 9.99, at Doylestown; least monthly, 1.68, at Lycippus.

**Wind.**—Prevailing direction, northwest.—*Under direction of the Franklin Institute, Philadelphia; W. P. Tatham, director; H. L. Ball, Observer, Weather Bureau, assistant.*

#### SOUTH CAROLINA.

**Temperature.**—Maximum, 97, at Kingstree, 24th; minimum, 57, at Brewer Mine, 14th, at Cheraw, 12th, and at Flint Hill, 17th.

**Precipitation.**—Greatest monthly, 24.67, at Hardeeville; least monthly, 5.13, at Clemson College.—*J. H. Harmon, Observer, Weather Bureau, Columbia, director.*

#### SOUTH DAKOTA.

**Temperature.**—The mean was 1.7 above the normal; maximum, 104, at Ashcroft, Onida, and Oelrichs, 7th, and at Midland, 3d, 7th, and 20th; minimum, 28, at Brookings, 28th; greatest monthly range, 74, at Ashcroft and Onida; least monthly range, 51, at Bear Valley.

**Precipitation.**—The average was 1.00 below the normal; greatest monthly, 2.70, at Yankton; least monthly, 0.18, at Midland.

**Wind.**—Prevailing directions, south and southeast.—*S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.*

#### TENNESSEE WEATHER AND CROP SERVICE.

**Temperature.**—The mean was 0.9 above the normal; maximum, 98, at Covington and Dyersburg, 9th; minimum, 50, at Springdale, 8th; greatest monthly range, 46, at Hohenwald and Brownsville; least monthly range, 24, at Lookout Mountain.

**Precipitation.**—The average was 1.10 below the normal; greatest monthly, 11.17, at Riddleton; least monthly, trace, at Jackson, Milan, and Trenton.

**Wind.**—Prevailing direction, south.—*J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.*

#### TEXAS.

**Temperature.**—The mean was 1.0 below the normal; maximum, 110, at Highlands, 2d, and at Sulphur Springs, 1st; minimum, 40, at Coldwater, 30th; greatest monthly range, 66, at College Station; least monthly range, 21, at Galveston.

**Precipitation.**—The average was 0.67 below the normal; greatest monthly, 7.74, at Orange; least monthly, 0.00, at Flower Bluff.

**Wind.**—Prevailing direction, southeast.—*D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.*

#### UTAH.

**Temperature.**—Maximum, 112, at Saint George, 4th; minimum, 25, at Scofield, 24th; greatest monthly range, 70, at Thistle; least monthly range, 43, at Moab.

**Precipitation.**—Greatest monthly, 4.50, at Losee; least monthly, 0.11, at Snowville and Logan.

**Wind.**—Prevailing direction, southwest.—*G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.*

#### VIRGINIA.

**Temperature.**—Maximum, 99, at Stephens City, 25th; minimum, 45, at Hot Springs, 15th; greatest monthly range, 49, at Stephens City; least monthly range, 28, at Birdsnest.

**Precipitation.**—Greatest monthly, 8.65, at Christiansburg and Lynchburg; least monthly, 1.52, at Marion.

**Wind.**—Prevailing direction, south.—*Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.*

#### WASHINGTON.

**Temperature.**—The mean was 1.2 below the normal; maximum, 102, at Fort Spokane and Walla Walla, 1st, and at Bridgeport, 31st; minimum, 33, at Rosalia, 10th.

**Precipitation.**—The average was 0.45 below the normal; greatest monthly, 1.16, at Aberdeen; least monthly, 0.00, at Bridgeport and Pullman.

**Wind.**—Prevailing direction, west.—*H. F. Alciatore, Observer, Weather Bureau, Olympia, director.*

#### WEST VIRGINIA.

**Temperature.**—Maximum, 98, at New Martinsville, 26th; minimum, 41, at Davis, 2d, 6th, and 8th; greatest monthly range, 51, at Spencer; least monthly range, 31, at Weston and Pleasant Hill.

**Precipitation.**—Greatest monthly, 6.82, at Bluefield; least monthly, 1.76, at Grafton.

**Wind.**—Prevailing direction, west.—*W. W. Dent, Observer, Weather Bureau, Parkersburg, director.*

#### WISCONSIN.

**Temperature.**—The mean was about 1.0 below the normal; maximum, 104, at Osceola, 8th; minimum, 28, at Barron, 29th.

**Precipitation.**—Greatest monthly, 6.00, at Sparta; least monthly, 0.81, at Shawano.—*W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.*

#### WYOMING.

**Temperature.**—Maximum, 102, at Wheatland, 6th; minimum, 31, at Saratoga, 15th; greatest monthly range, 66, at Sheridan; least monthly range, 45, at Saratoga.

**Precipitation.**—Greatest monthly, 2.24, at Saratoga; least monthly, 0.12, at Sheridan.

**Wind.**—Prevailing direction, northwest.—*E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.*